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(54) **Putrescine N-methyltransferase, recombinant DNA molecules encoding putrescine N-methyltrasferase, and transgenic tobacco plants with altered nicotine content.**

(57) There is provided highly purified tobacco putrescine N-methyltransferase, a process for its purification, and production of PMT DNA sequence. The purification process includes the step of applying a tobacco root extract to an anion exchange medium and specifically eluting putrescine N-methyltransferase with an elution buffer comprising putrescine.

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EUROPEAN SEARCH REPORT

Application Number

EP 91 31 0283

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
D,X	CHEMICAL ABSTRACTS, vol. 76, 1972, Columbus, Ohio, US; abstract no. 55697, MIZUSAKI, S., ET AL.: 'Phytochemical studies on tobacco alkaloids. XIV. Ocurrence and properties of putrescine N-methyltransferase in tobacco roots'	1,2	C12N15/54 C12N9/10 C12N15/11 C12N5/10 A01H5/00
Y	* abstract * & PLANT CELL PHYSIOL. vol. 12, no. 4, 1971, pages 633 - 640; ---	15-23	
Y	EP-A-0 240 208 (CALGENE) 17 October 1987 * page 4, line 27 - line 28 * ---	15,17, 19-21,23	
Y	PLANT MOLECULAR BIOLOGY, vol. 15, no. 1, July 1990, DORDRECHT, THE NETHERLANDS, pages 27 - 38; HAMILL, J.D. ET AL.,: 'Over-expression of a yeast ornitihine decarboxylase gene in transgenic roots of Nicotiana rustica can lead to enhanced nicotine accumulation' * page 37, right column, paragraph 1 * ---	15,16, 18,20-22	TECHNICAL FIELDS SEARCHED (Int. Cl.5) C12N A01H
D,A	CHEMICAL ABSTRACTS, vol. 105, 1986, Columbus, Ohio, US; abstract no. 112135, FETH, F., ET AL.: 'Regulation in tobacco callus of enzyme activities of the nicotine pathway. I. The route ornithine to methylpyrroline' * abstract * & PLANTA vol. 168, no. 3, 1986, pages 402 - 407; --- -/--	1-23	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	16 SEPTEMBER 1992	MADDOX A.D.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	CHEMICAL ABSTRACTS, vol. 92, 1980, Columbus, Ohio, US; abstract no. 177499, OHTA, S., ET AL.: 'Metabolic key step discriminating nicotine production callus strain from ineffective one' * abstract * & BIOCHEM. PHYSIOL. PFLANZ. vol. 175, no. 4, 1980, pages 382 - 385; ---	1-23	
A	CHEMICAL ABSTRACTS, vol. 106, 1987, Columbus, Ohio, US; abstract no. 99481, WAGNER, R., ET AL.: 'The regulation of enzyme activities of the nicotine pathway in tobacco' * abstract * & PHYSIOL. PLANT. vol. 68, no. 4, 1986, pages 667 - 672; ---	1-23	
A	THE PLANT CELL. vol. 2, no. 1, January 1990, ROCKVILLE, MD, USA. pages 7 - 18; LAGRIMINI, L.M., ET AL.: 'Peoxidase-induced wilting in transgenic tobacco plants' * page 16, left column, last paragraph * ---	15,16, 18,20-22	TECHNICAL FIELDS SEARCHED (Int. Cl.5)

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